



The Open University of Sri Lanka  
 Faculty of Engineering Technology  
 Bachelor of Industrial Studies Honours (Agriculture) Programme  
**Final Examination - 2016/2017**

**AEI3234 Agricultural biology I**

Date : 19 - 11 - 2017  
 Time : 0930 - 1230 hours  
 Duration : Three (03) hours

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**SECTION 2: Answer any four (04) questions.**

1. a.) Illustrate and explain the primary structure of the dicotyledonous stem.  
 b.) Explain the development of secondary vascular tissues in dicots.
  
2. A certain variety of a plant species took 72 days from germination to reach reproductive maturity and to flower. Another variety of the same plant species took only 56 days under identical environmental conditions. Both varieties were true breeding. The F1 generation from a cross between these two varieties needed 62, 63, 64, or 65 days to reach the following stage. The F2 generation obtained by selfing the F1 gave a progeny of 5702 plants. Of these 90 plants needed 72 days and 80 plants needed 56 days respectively to reach the flowering stage. The rest showed between 57 to 71 days to flower. Explain these observations.
  
3. Explain the process of protein synthesis in living cells.
  
4. Describe the formation of carbohydrate molecules in photosynthesis starting from the absorption of light energy.
  
5. a. Where does the respiration occur in the cells?  
 b. Describe the energy production of plants through respiration until harvesting the overall energy.
  
6. Write short notes on any four (04) of the following.
  1. Influence of environment on heredity
  2. Multiple factor inheritance
  3. Compare the structure of a chloroplast and a mitochondrion in relation to function.
  4. Role of fermentation as a method of respiration
  5. Types of ecosystems